Future Electricity Sector Utility Ownership & Regulation in Hawaii

Draft Preliminary Results

Kauai County

Prepared for Hawaii Department of Business, Economic Development, and Tourism (“DBEDT”)
London Economics International LLC (“LEI”) was engaged by the Department of Business Economic Development and Tourism to look at various ownership and regulatory models for the State of Hawaii (also referred to herein as the “Project”). LEI has made the qualifications noted below with respect to the information contained in this preliminary presentation and the circumstances under which the presentation was prepared.

While LEI has taken all reasonable care to ensure that its analysis is complete, power markets are highly dynamic, and thus certain recent developments may or may not be included in LEI’s analysis. Stakeholders should note that:

- LEI’s analysis is not intended to be a complete and exhaustive analysis of the Project. All possible factors of importance to a stakeholder have not necessarily been considered. The provision of an analysis by LEI does not obviate the need for the stakeholders to make further appropriate inquiries as to the accuracy of the information included therein, and to undertake their own analysis and due diligence.
- No results provided or opinions given in LEI’s analysis should be taken as a promise or guarantee as to the occurrence of any future events.
- There can be substantial variation between assumptions and market outcomes analyzed by various consulting organizations specializing in power markets. LEI does not make any representation or warranty as to the consistency of LEI’s analysis with that of other parties.
The primary goals of today’s outreach are to provide preliminary results and obtain final feedback from stakeholders.

1. Provide an overview of analyses performed for the Study

2. Share insights on the preliminary results of the Study

3. Solicit stakeholders’ input for the final report
1. About the study
2. Ownership models
3. Regulatory models
4. Summary of preliminary findings
5. Discussions
Goals of the Study

DBEDT is directed by the legislation to:

Evaluate alternative utility ownership and regulatory models

Ownership models include: co-ops, investor-owned utilities, Single Buyer, and integrated distribution energy resources (“IDER”) system operator

Regulatory models include status quo with HERA, status quo with lighter PUC regulations, independent system operator, or distribution-focused regulatory model

Assess the ability of each model to:

1) Achieve state energy goals
2) Maximize customer cost savings
3) Enable a competitive distribution system
4) Eliminate or reduce conflicts of interest
5) Align interests

Conduct a long-term cost benefit analysis

- Costs required to change from current model to new model
- Legal and regulatory approvals needed for the change
- Impact on revenue requirements and rates
- Effects on distributed energy resources

Source: House Bill 1700
The assessment of potential models consists of multiple layers, including various analyses and stakeholder outreaches.

Key steps taken in the Study

1) Considered **several potential models** for Kauai

2) Performed **high-level assessments** including pros/cons, feasibility assessments, and stranded costs

3) Conducted **community outreaches** and one-on-one meetings; incorporated views from the **stakeholders**

4) **Ranked** the alternative models based on state goals and impact to ratepayers

5) Conducted **more in-depth analyses** of the alternative models

6) ** Compared results** of alternative utility ownership and regulatory models

Ownership models

- Three feasible **ownership models** for further consideration

Regulatory models

- Three feasible **regulatory models** for further consideration
According to the stakeholders, lowering the rates now and in the future is a priority.

**Highest electricity prices in the country**

Average price of electricity, residential (June, 2018)

Source: EIA. HECO Companies, Third Party Databases

**Other priorities raised by stakeholders**

- Reducing regulatory burden
- Limited resources to effectively oversee co-op
- Rate regulation
- Local control
- More renewable energy
- Innovation and adoption of new technologies
State's and counties’ distinct characteristics are taken into account in the analyses

**Multiple islands**

Largest concentration of US military bases and compounds in the country

**100% clean energy goal**

*Achieved RPS vs. 100% RPS target*

| Source: HECO Companies, KIUC |

**Expected high penetration of DERs**

*HECO Companies' forecast cumulative DER capacity*

**Aging generation and transmission assets**

*Age of thermal plants as of 2017*

Source: HECO Companies, Third-party database provider
<table>
<thead>
<tr>
<th></th>
<th>Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>About the study</td>
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<td>Ownership models</td>
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<td>3</td>
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<td>4</td>
<td>Summary of preliminary findings</td>
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<td>5</td>
<td>Discussions</td>
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</table>
Various utility ownership structures were reviewed ranging from traditional utility-centric models to grid defection.

<table>
<thead>
<tr>
<th>Model</th>
<th>Owner</th>
<th>How does it work?</th>
</tr>
</thead>
</table>
| 1) Investor-owned utility (“IOU”)          | • Shareholders (publicly traded or privately held) | • Management is *appointed by the Board*, which has a fiduciary duty to its shareholders  
• Access to capital market to *finance large investments*                                                                                       |
| 2) New parent                              | • Private or not-for-profit                     | • Could be *not-for-profit, a limited dividend, or a benefit corporation*  
• Management is appointed by the Board                                                                                                              |
| 3) Municipal utility (“muni”)              | • Owned by the city or the town                | • Governed by *local elected or appointed officials*  
• Finance energy improvements with *government bonds*  
• Benefit from access to *tax exempt debt financing* and they may also be tax exempt                                                            |
| 4) Cooperative (“co-op”)                   | • Owned by the members-customers               | • Management has oversight by its *Board* and in some cases, from *regulators*  
• have access to low cost debt and *special federal financing programs*                                                                             |
| 5) Hybrid (majority government-owned)       | • Owned majority by the *government*           | • Management is appointed by the *Board*                                                                                                           |
| 6) Integrated distribution energy resources (“IDER”) | • Utility (wires assets)                       | • Coordinating flows across the grid can either be done by the utility or another entity                                                            |
| 7) Single Buyer (“SB”)                     | • Utility or independent, not-for-profit entity | • SB within the utility is still owned by the utility but have stricter *ring-fencing mechanisms from other businesses*  
• SB could also be outside the utility                                                                                                               |
| 8) Grid defection                          | • Diverse (generation)  
• Utility (wires)                          | • Utility would still provide services to customers connected to the grid but at a higher costs                                                    |
The “friendliness” of the acquisition plays a significant role in the feasibility of the ownership model

<table>
<thead>
<tr>
<th>Model</th>
<th>Stranded costs on generation?</th>
<th>Stranded costs on T&amp;D?</th>
<th>Comply with reliability, adequacy, quality of service?</th>
<th>Require separation of some businesses?</th>
<th>Require costs to move to new model?</th>
<th>Require legal or regulatory changes?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Co-op</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) IOU</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3) New parent</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4) Muni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Hybrid</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6) IDER</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>7) Single Buyer</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) Grid defection</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Positive | Negative | Can be positive or negative
“Ownership change will not entirely address our concerns; there is a need for regulatory changes and strong leadership” - Stakeholders

**IOUs**
- **Lack of competition**
- **Misalignment** between utility incentives and community interests or policy priorities
- **Stable**
- **Economies of scale**
- Can attract a **talented workforce**

**Co-ops**
- Governed by 3 entities – lender, PUC, and the Board
- Could do more to **reduce rates and increase transparency**
- **Direct influence** on the decision-making process; allows for public input
- Access to **low cost financing**
- Democratically controlled
- **Encourages efficient use of resources**

**Munis**
- **Politicization**
- Not interested because of **distrust in political leaders** and concerns about them managing a utility
- Issue on ability of government to **operate the utility**
- More responsive to community interests
Community is already **familiar** with the structure

**Wires (IDER and Single Buyer)**
- Complexity and novelty of the model (IDER)
- **Limited** examples (Single Buyer)
- Ensures fair procurement process
Three alternative ownership models, including IOU and SB (within and outside of the utility), were selected for additional review.

- **IOU**
  - Achieves state energy goals
  - Provides consumer savings
  - Reduces conflicts of interest
  - Aligns stakeholder interests
  - Minimizes costs

- **Single Buyer (within the utility)**
  - Achieves state energy goals
  - Provides consumer savings
  - Reduces conflicts of interest
  - Aligns stakeholder interests
  - Minimizes costs

- **Single Buyer (outside of the utility)**
  - Achieves state energy goals
  - Provides consumer savings
  - Reduces conflicts of interest
  - Aligns stakeholder interests
  - Minimizes costs

- **Advantages vs. Disadvantages**
  - High-level Feasibility analyses
  - Regulatory requirements
  - Impact on stranded costs

Step 4: Ranked the potential models based on state goals and impact to ratepayers.
While a transition to IOU ownership would require PUC approval, a SB construct would require changes in law and regulatory structure.

<table>
<thead>
<tr>
<th>Models</th>
<th>Costs</th>
<th>Timeline</th>
<th>Legal changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op (IOU)</td>
<td>No costs</td>
<td>About 24-36 months</td>
<td>• No changes to regulation are necessary</td>
</tr>
<tr>
<td>Single Buyer (outside of the utility)</td>
<td>• 10% premium paid to current members for their equity stake in the co-op</td>
<td>24-48 months with significant uncertainty due to the legislative and regulatory processes to establish the single buyer entity</td>
<td>• Require a PUC proceeding</td>
</tr>
<tr>
<td>Single Buyer (within the utility)</td>
<td>• Setup costs of at least $3 million (Year One costs), which may be a low estimate of the total establishment cost</td>
<td></td>
<td>• Requires legislative action to establish a new entity to undertake the planning and procurement responsibilities of the utility</td>
</tr>
</tbody>
</table>
Any change in ownership model is expected to increase rates on Kauai County

### Change of the Ownership Model

<table>
<thead>
<tr>
<th>Change of the Ownership Model</th>
<th>Impact on rates*</th>
<th>Average impact**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to an IOU model</td>
<td>![Up Arrow]</td>
<td>5.2%</td>
</tr>
<tr>
<td>Move to a Single Buyer within the utility model</td>
<td>![Up Arrow]</td>
<td>1.0%</td>
</tr>
<tr>
<td>Move to a Single Buyer outside the utility model</td>
<td>![Up Arrow]</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

* Relative to the Status Quo  
** From 2018 to 2045
Agenda

1. About the study
2. Ownership models
3. Regulatory models
4. Summary of preliminary findings
5. Discussions
Various regulatory models appropriate to the State and are not mutually exclusive were assessed

<table>
<thead>
<tr>
<th>HERA Model</th>
<th>Distribution System Platform Provider (“DSPP”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ A <strong>dedicated body</strong> (HERA) would enforce and oversee compliance with formal reliability standards</td>
<td>▶ Distribution utilities are <strong>required to provide a platform for third-party participation</strong> in a distribution system marketplace</td>
</tr>
<tr>
<td>▶ HERA would <strong>support the PUC</strong> in carrying out critical functions related to reliability and grid access oversight functions</td>
<td>▶ Utilities still <strong>own and operate</strong> the distribution system and become the Distributed System Platform Provider (“DSPP”)</td>
</tr>
<tr>
<td>▶ The PUC may <strong>contract</strong> with a person, business, or organization, (but not a public utility) for the performance of HERA’s functions</td>
<td>▶ <strong>DSPP</strong> is responsible for planning and designing its distribution system to be able to integrate DER</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Integrated Grid Operator Model (“IGO”)</th>
<th>Lighter PUC regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ An independent entity would be responsible for planning and operations, including the dispatch of both the transmission and distribution system</td>
<td>▶ The co-ops would be <strong>exempted</strong> from most of PUC’s regulations established based on an IOU structure</td>
</tr>
<tr>
<td>▶ IGO would also <strong>determine the investment requirements</strong> of both transmission and distribution networks</td>
<td>▶ <strong>KIUC</strong> would continue to be under the regulatory oversight of the <strong>Rural Utilities Service</strong> in terms of planning, financing, and capital investments</td>
</tr>
<tr>
<td>▶ Utilities will <strong>continue to own</strong> the wires assets, but the operations would be under the IGO</td>
<td>▶ <strong>PUC</strong> investigation could be opened following certain events:</td>
</tr>
<tr>
<td></td>
<td>▪ <strong>Rates increases</strong> exceed the higher of 5% or 2 times the State CPI, and 5x more ratepayers object to PUC</td>
</tr>
<tr>
<td></td>
<td>▪ When the <strong>capex spent increases</strong> beyond the set threshold</td>
</tr>
<tr>
<td></td>
<td>▪ If ratepayers provide evidence of <strong>rate discrimination</strong>; and</td>
</tr>
<tr>
<td></td>
<td>▪ If the customer has <strong>exhausted KIUC internal dispute resolution processes</strong> and continues to feel KIUC has acted contrary to their policies, PUC guidelines, or the State law.</td>
</tr>
</tbody>
</table>
Potential regulatory models are feasible, and some may require additional legislative processes

<table>
<thead>
<tr>
<th>Model</th>
<th>Result to stranded costs on generation?</th>
<th>Result to stranded costs on T&amp;D?</th>
<th>Comply with reliability, adequacy, quality of service?</th>
<th>Entail the creation of a new entity to do a function of the utility or PUC?</th>
<th>Require costs to move to new model?</th>
<th>Require legal or regulatory changes?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) HERA</td>
<td>X</td>
<td>X</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>X</td>
</tr>
<tr>
<td>2) IGO</td>
<td>X</td>
<td>X</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>3) DSPP</td>
<td>X</td>
<td>X</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>4) Lighter PUC regulation</td>
<td>X</td>
<td>X</td>
<td>√</td>
<td>X</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

Positive

Negative
Step 3: Conducted community outreaches and one-on-one meetings

Stakeholders believe that KIUC has demonstrated the ability to manage and operate the utility well

<table>
<thead>
<tr>
<th>Models</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Status quo</strong></td>
<td>provides an additional layer of credibility and increased ratepayer confidence</td>
<td>regulatory proceedings should have a pre-established time frame for decisions and/or other actions</td>
</tr>
<tr>
<td><strong>HERA</strong></td>
<td>could result to more grid access and increase deployment of renewables</td>
<td>would be redundant, since the PUC already assumes much of the role</td>
</tr>
<tr>
<td><strong>IGO</strong></td>
<td>could increase competition</td>
<td>would be too costly to implement</td>
</tr>
<tr>
<td><strong>DSPP</strong></td>
<td>a way to increase competition and deployment of DERs</td>
<td>the market is too small in Hawaii for an ISO to work</td>
</tr>
<tr>
<td><strong>Lighter PUC regulation</strong></td>
<td>PUC regulations are unnecessary</td>
<td>would not work in Hawaii as the cost would be too high</td>
</tr>
<tr>
<td></td>
<td>Hawaii should follow the example on mainland where co-op are not regulated as heavily as IOUs</td>
<td>could result in the state’s inability to ensure co-ops to comply with state policy goals</td>
</tr>
<tr>
<td></td>
<td>a reduction in regulations would reduce costs for both KIUC and the PUC</td>
<td></td>
</tr>
</tbody>
</table>
Analysis on the state criteria showed that combining some of the regulatory models would be more effective in facilitating the achievement of state goals

- Supports state goals
- Addresses conflicts of interest
- Supports transition to competitive distribution
- Ensures quality of service
- Reduces rate volatility

Inputs from the stakeholders

Lighter PUC regulation

HERA

IGO

Ongoing discussion about PBR
Reducing the regulatory requirements for KIUC is likely to provide the greatest cost reductions to ratepayers because the other regulatory models have a smaller impact on overall costs.

### Kauai

<table>
<thead>
<tr>
<th>Change of the Regulatory Model</th>
<th>Impact on rates*</th>
<th>Average impact**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to Lighter PUC Regulation</td>
<td><img src="#" alt="green_down" /></td>
<td>-0.80%</td>
</tr>
<tr>
<td>Establish a HERA model</td>
<td><img src="#" alt="red_up" /></td>
<td>0.02%</td>
</tr>
<tr>
<td>Establish an IGO model</td>
<td><img src="#" alt="green_down" /></td>
<td>-0.03%</td>
</tr>
</tbody>
</table>

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Key conclusions

► The current ownership and regulatory framework has been successful at ensuring utilities provide reliable service.

► A change in ownership model would likely increase electricity rates.
  ▪ Acquisition and transition costs drive the rate increase.

► An IGO would have an overall neutral impact on rates, but the complexities of the transition and implementation may not warrant the change.

► Lighter PUC regulation would help reduce rates, but there is still a need for a safety net for consumers.

► HERA could be a vehicle to provide arbitration services, together with establishing consistent reliability standards to help the state meet the renewable energy goals.
We encourage you to submit your feedback and input throughout the stakeholder engagement process:

- During the event, please fill out your worksheet to the best of your ability during discussion with your colleagues. After this event, we plan to collect your worksheets to gather input for our study.
- We will also be available for feedback up to an hour after the event if you would like to provide additional comments.
- You can also submit feedback via the following email: dbedt.utilitybizmodstudy@hawaii.gov
- Finally, the presentation will be available at: https://energy.hawaii.gov/community-outreach

Questions? Concerns? Contact Us:

- Bridgett Neely, Bridgett@londoneconomics.com
- Cherrylin Trinidad, cherrylin@londoneconomics.com
- Gabriel Roumy, Gabriel@londoneconomics.com
Agenda

1. About the study
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Guiding questions for small groups:

1. What do you think are the benefits and drawbacks of the preferred models?

2. Any other comments or concerns?